SESLHD PROCEDURE

COVER SHEET

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KEY TERMS	Epidural analgesia, continuous infusion, patient controlled epidural analgesia, programmed intermittent epidural bolus, epidural catheter
SUMMARY	This document outlines the requirements for the safe management of adult (non-obstetric) patients receiving epidural analgesia via a continuous infusion / patient-controlled / programmed intermittent bolus for pain management.

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1. POLICY STATEMENT

This procedure relates to the management of adult patients (non-obstetric) receiving epidural analgesia via a continuous infusion, patient controlled or programmed intermittent bolus for pain management. Epidural analgesia is used selectively for certain post-surgical, medical and trauma patients to provide optimum pain relief safely and effectively via the epidural route.

2. BACKGROUND

Epidural analgesia is an effective modality of pain management that provides pain relief by continuous, patient controlled or intermittent administration of pharmacological agents, usually local anaesthetic with or without an opioid, into the epidural space via an indwelling catheter.

2.1 Definitions:

- Authorised prescriber: Anaesthetists / Anaesthetic (Consultants, Fellows and Registrars)
- Continuous Infusion: program delivering a continuous rate as a slow infusion across the entire hour
- Programmed Intermittent Epidural Bolus **(PIEB)** 'Intermittent infusion': delivers background hourly dose as one or more mandatory bolus doses, rather than a slow continuous infusion across the entire hour
- Patient Controlled Epidural Analgesia **(PCEA**): a mode whereby patients may manage their pain with a self-administered bolus of additional epidural solution on demand via the PCEA handset.

3. RESPONSIBILITIES[1 2]

- Registered Nurses (RNs)
- Medical Staff – Anaesthetists / Anaesthetic (Consultants, Fellows, Registrars).

  ALL decisions relating to the management of Epidural Analgesia (Adult) non-obstetric patients are only to be made by an Anaesthetist / Anaesthetic (Consultants, Fellows and Registrars) or Acute Pain Service (APS).

  All other medical staff must request an Anaesthetic or APS review of the patient.

4. PROCEDURE

4.1 Education:[1 4 22]

- All staff involved with the administration of epidural analgesia must have completed My Health Learning Module Pain Management: Epidural infusions (Course Code: 441985392) and received education / training to manage patients safely and effectively.
- Patients receiving epidural analgesia should only be managed in wards and units where the nursing staff have received education / training in epidural analgesia management.
- Epidural rescue bolus doses may be administered only by RNs who have received education / training in their individual hospital.

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4.2 Prescription[2 3 5 6 7 8 9 10 21]

- Epidural analgesia must be prescribed on the approved NSW Health Epidural Analgesia Adult form SMR130.022 in accordance with NSW Ministry of Health Policy Directive PD2022_032 - Medication Handling. As this is a paper prescription, use should also be noted in eMEDS / eMR as an 'additional chart' reminder order. Please refer to eMeds- Additional Charts order- Add, Modify or Remove eMR Reference Guide.
- For patients with Epidural analgesia admitted to the Intensive Care Unit (ICU) the epidural prescription is to be transcribed into eRIC by ICU prescribers in addition to the original prescription. The infusion must be clearly labelled as '**Epidural**' infusion[3]
- Epidural analgesia may only be prescribed by an 'Authorised prescriber' and is valid for a maximum of 4 days before needing to be recharted, unless ceased earlier.
- Commonly prescribed (preloaded) local anaesthetic agents:
  - 0.2% Ropivacaine (2mg/mL)
  - 0.2% Ropivacaine (2mg/mL) with Fentanyl 2 microg/mL
  - Fentanyl 2microg/mL with Adrenaline (Epinephrine) 2 microg/mL and 0.1% Bupivacaine in 500mL (POWH only: refer to Medicine Guideline - Fentanyl 2 microg/mL with Adrenaline (epinephrine) 2 microg/mL and Bupivacaine 0.1% epidural infusion.)

Epidural analgesia may be delivered by:
(As per local hospital approved practices)

- **Continuous** infusion +/- Rescue bolus dose
- Patient Controlled Epidural Analgesia **(PCEA)**
- Programmed Intermittent Epidural Bolus **(PIEB)**
- Programmed Intermittent Epidural Bolus **(PIEB) +** Patient Controlled Epidural Analgesia **(PCEA)**

Note:

- Each individual patient's risk / benefit assessment for epidural analgesia will have been considered by the individual anaesthetist during the time of review
- The proceduralist has the responsibility to ensure the required delivery equipment is available and obtained prior to the procedure.
- All patients with epidural analgesia must have intravenous access at all times and continued for a minimum of six hours post epidural catheter removal
- Naloxone, Metaraminol and Atropine should be provided and used by the Rapid Response or Code Blue team for the management of severe adverse effects
  Therapeutic anticoagulants **MUST NOT** be given without consent from APS / Anaesthetist.

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4.3 Preparation of Epidural Infusion[3]

- Use only pre-loaded epidural infusion flasks to help reduce medication errors and assist in infection control
- Use only dedicated epidural administration sets that are yellow in colour, portless and clearly labelled as 'Epidural infusion'[2]
- Do NOT inject any other medications into the epidural line.

4.4 Programming of Epidural Pump[1]

- Only use dedicated infusion pumps with programmed safety limits for epidural analgesia that are easily distinguishable from those used for intravenous and other types of infusions within individual hospitals[2,11]
- A pump used for epidural analgesia must be programmed by two Registered Nurses
- A pump used for epidural analgesia must be programmed according to the parameters set by the prescribing Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS on the approved NSW Health Epidural Analgesia Adult form SMR130.022.
- The epidural pump settings should be checked at the commencement of each shift, patient transfer, prior to administration of a rescue bolus dose and when the flask is changed.

4.5 Observations[1]

The RN assigned to the patient receiving epidural analgesia is responsible for ensuring the following observations are carried out and documented on the inside of the NSW Health Epidural Analgesia Adult form SMR130.022. The RN must check the patient's observations are between the flags and refer to the management guidelines on the front of the NSW Health Epidural Analgesia Adult form SMR130.022, if observations fall outside these parameters. If in doubt Anaesthetist / Anaesthetics (Consultants, Fellows, Registrar) / APS should be contacted to review the patient.

OBSERVATIONS	FREQUENCY
Pain Assessment Score at rest "R" and with relevant movement "M" **Sedation Score** **Respiratory Rate** **Oxygen therapy** **SpO_2** **Blood Pressure** **Heart Rate**	Hourly for the first six (6) hours post epidural insertion / commencement or change in program. Then 2nd hourly or more frequently if patients clinical condition warrants Before any rescue bolus dose, and AFTER A RESCUE BOLUS every ten (10) minutes for 30 minutes and then one (1) hour post rescue bolus dose (or more frequently if directed by an anaesthetist).
Infusion rate (mL/hr) ***Document cumulative infused total (mL)***	Hourly for the first six (6) hours, then 2nd hourly (if no change in rate)
Temperature	Every four (4) hours or more frequently if clinically required
Motor Block Assessment	Every four (4) hours and prior to

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Use Bromage scale (*See Appendix B)*	mobilisation
Sensory Block Assessment (Dermatome level check) *(Refer to 4.5.1 for sensory testing instructions)*	Every four (4) hours and prior to / or after administration of a rescue bolus dose or more frequently as specified by Anaesthetist / Anaesthetic Registrar / APS.
Epidural catheter insertion site check	Every eight (8) hours – At shift change, check for: Catheter position, integrity of epidural dressing and signs of leakage. Assess for any tenderness, redness or back pain at the epidural site
Bladder function check	Once per shift
Epidural program check with prescription	At shift handover; when flask is changed; program alterations and on patient transfer between wards / units or procedures

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4.5.1 Sensory Testing (Dermatome Level Check) [1] *(See Appendix B)*

- Place ice on an area well away from the possible dermatome cover (e.g. face or forearm) and ask them to tell you how cold it feels to them.
- Apply ice to an area likely to be blocked on the same side of the body and ask the patient "Does this feel the same cold as your face / arm or different?"
- Apply ice to areas above and below this point until it is clear at which level the top and the bottom of the block is.
- Repeat the procedure on the opposite side of the body (Note: a block may be uneven or unilateral).
- Document the blocked dermatomes on the NSW Health Epidural Analgesia Adult form SMR130.022 in the 'Dermatome Level Check section'.
- Record both the upper and lower limits of the block:

e.g. T7-L1 L=R or R: T7-L1 L: T10-L2

4.6 Changing the Infusion Bag [1] [2]

- An infusion bag must be checked by two RNs and changed by an RN who has received epidural analgesia education / training in their individual hospital. It must be recorded on the NSW Health Epidural Analgesia Adult form SMR130.022 in the 'Record of epidural administration' section and signed by both RNs. Both RNs must witness the discarded amount and record in the 'Record of epidural solution discarded' section and sign.
- The dedicated epidural giving set must not be changed without consultation with the Anaesthetist/ Anaesthetic (Consultants/ Fellows/ Registrars) / APS. Routine changing of the giving set is NOT required.
- An aseptic no-touch technique must be used when changing medication bags.
- Epidural bags are to be changed once the infusion has run through, with a maximum hang time of 24 hours, unless specified otherwise in the manufacturer's product information (available on MIMS).

4.7 Administration of a Rescue Bolus Dose [1] [11]

A rescue bolus dose should be administered, as prescribed, when a patient is experiencing inadequate analgesia. Administration of multiple rescue boluses is NOT recommended without review by the Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS.

- Prior to administration check the epidural infusion delivery device and administration set for faults, kinks or disconnection and perform a full set of observations including motor and sensory level of block assessments
- Check catheter insertion site for catheter position or signs of leakage
- Identify a prescription for RESCUE BOLUS DOSE on the NSW Health Epidural Analgesia Adult form SMR130.022
- Check if a rescue bolus has not been given recently
- RNs who have received epidural analgesia education / training in their individual hospital may administer a rescue bolus dose and increase the rate. The dose must be checked and witnessed by a second RN
- Give prescribed rescue bolus dose and increase rate by 1 to 2 mL/hour
- The RN and witnessing RN must record and initial any rescue bolus dose in the 'Epidural Delivery' section on the NSW Health Epidural Analgesia Adult form

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SMR130.022

- Perform observations after the rescue bolus dose - as per section 4.5
- If pain persists and observations are stable give another rescue bolus dose if at the minimum interval between rescue doses (hours or minutes) as charted on the approved NSW Health Epidural Analgesia Adult form SMR130.022
- Increase the infusion rate in accordance with the prescription *if the maximum rate has not been reached* and if not contra-indicated by sensory testing and/or motor block
- Continue to monitor as per section 4.5
- If pain continues to persist, contact the APS or if after hours contact the Duty Anaesthetist
- If complications occur see section 4.8.

4.8 Management of Epidural Complications[1 12]

On the NSW Health Epidural Analgesia Adult form SMR130.022 the observations of sedation, respiratory rate, blood pressure, heart rate and motor blockade are colour coded to provide an alert for a Yellow zone (Clinical Review) or Red zone (Rapid Response or Code Blue).

4.8.1 Respiratory Depression / Over sedation

Concurrent use of parenteral opioids and sedatives increase the risk of respiratory depression. No other opioids or sedatives should be prescribed unless ordered by Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS.

If respiratory rate < 10 and / or increasing sedation (Sedation score 2)

- Ensure oxygen therapy in progress and support airway if necessary
- Encourage patient to breathe deeply
- Activate a Clinical review
- Contact Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS

If respiratory rate ≤ 5 or patient is unrousable (sedation score 3):

- Stop infusion
- Give oxygen at 15 Litre/minute and support airway if necessary
- Activate a Code Blue if respiratory arrest appears likely
- Administer IV Naloxone if prescribed.

4.8.2 Hypotension

Sympathetic blockade may lead to hypotension. However, with low concentrations of anaesthetic drugs used for epidural infusions, hypotension may be the result of hypovolemia rather than the epidural infusion. Other causes of hypotension must always be investigated such as bleeding, sepsis, myocardial insufficiency, pulmonary embolus and dehydration.

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If systolic is <90mmHg or as adjusted on the Alterations to Calling Criteria on the Electronic Observation Chart (BTF) via eMR.

- Stop the infusion
- Lie patient flat and do not lie head down
- Contact Anaesthetist/ Anaesthetic (Consultants, Fellows, Registrars) / APS
- Activate a Rapid Response review
- Consider IV fluid bolus
- Consider vasopressor

4.8.3 Bradycardia

If heart rate <40 or as adjusted on the Alterations to Calling Criteria blood on the Electronic Observation Chart (BTF) via eMR.

- Stop epidural infusion
- Activate Rapid Response
- Atropine must be available in the clinical area
- Contact Anaesthetist/ Anaesthetic (Consultants, Fellows, Registrars) / APS

4.8.4 Motor Block Assessment

- If Bromage score 1, 2 or 3 DO NOT ambulate
- Activate a Clinical review
- If patient experiences severe back pain, increasing motor block, bladder / bowel incontinence, numbness / tingling and weakness in lower limbs, contact Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS **urgently.** The presence of these observations must be reported to a consultant anaesthetist.

4.8.5 Inadequate Analgesia[1]

- Give prescribed epidural rescue bolus dose and increase rate within prescription limits – as per section 4.7
- If required, repeat as long as the minimum interval between rescue doses (hours or minutes) as charted on the approved NSW Health Epidural Analgesia Adult form SMR130.022 has elapsed.
- If analgesia is inadequate after second bolus, notify Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS

4.8.6 Nausea or Vomiting

- Administer PRN antiemetics as prescribed on the patient's Medication Administration Record (MAR) via Electronic Medical Record system (eMR)
- If adverse effect continues contact APS.

4.8.7 Urinary Retention

- Bladder scan
- Contact patient's primary care team for assessment ± urinary catheterisation

4.8.8 Pruritus

- Notify Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS
- Consider low dose naloxone
- DO NOT give sedating antihistamine

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4.8.9 Inadvertent Epidural Catheter Disconnection

- If catheter is disconnected at the filter, **DO NOT** reconnect
- Stop the infusion
- Cover the catheter end with sterile cap or sterile gauze if catheter disconnects from connector / filter
- Contact Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS immediately.

4.8.10 Epidural Dressing Detaching / Lifting

- Reinforce only if catheter insertion site is not exposed / do not change dressing routinely (use only vapour permeable dressings)
- If insertion site exposed contact Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS.

4.9 Potential Serious Epidural Complications

4.9.1 Post Dural Puncture Headache[13]

Signs and symptoms: headache (bifrontal or occipital) are usually postural (exacerbated when patient is in an upright position and improved when lying flat)

- Contact Anaesthetist / Anaesthetic (Consultants, Fellows, Registrars) / APS
- Treatment includes lying flat, bed rest, analgesia (simple or opioid), high fluid intake (unless contraindicated) and caffeine
- Consider epidural blood patch.

4.9.2 Epidural Haematoma[14]

The puncture of epidural blood vessels during catheter insertion or removal may result in the formation of an epidural haematoma, particularly in the presence of coagulopathy

Signs and symptoms:

- lower limb weakness and / or numbness (increasing motor block)
- back pain
- bowel or bladder dysfunction
- Stop infusion, call APS / Anaesthetist / medical team for **immediate urgent neurological assessment /** may need urgent MRI / urgent surgical decompression if neurological changes develop due to nerve or spinal cord compression.

4.9.3 Epidural Space Infection

- May be prevented by using strict aseptic technique during insertion, preparation and administration of solutions. Always connect epidural line to a bacterial filter, ensure all connections are Luer Locked, secured and maintain a clear occlusive dressing over epidural site
- If patient has temperature spikes > 38.5^{C}, notify APS / Anaesthetics and consider removal of epidural catheter
- If signs of inflammation / infection at insertion site, notify APS, consider removal of epidural catheter
- The presence of severe or increasing back pain, may indicate epidural abscess and should be investigated promptly (even in the absence of fever) see 4.9.2
- As epidural space infection can present up to six weeks post epidural catheter

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removal, patients should be educated regarding signs and symptoms and written post epidural information should be provided where available

4.9.4 Neurological Injury[14]

Direct damage to the spinal cord or peripheral nerves due to the epidural needle or catheter is extremely rare.

- Signs and symptoms - weakness, numbness, tingling sensation in lower limbs, bowel or bladder incontinence
- Stop infusion, call APS / Anaesthetist / medical team for **immediate urgent neurological assessment.**

4.9.5 Catheter Migration[15]

Rarely a catheter placed in the epidural space may migrate into the intrathecal space or an epidural blood vessel.

- Signs and symptoms - migration into the intrathecal space will usually result in a rapidly increasing block with a sudden onset of complications. Migration into a blood vessel may result in increasing pain +/- signs of local anaesthetic toxicity (perioral numbness, tinnitus, dizziness, facial twitching, seizures)
- Stop infusion, notify APS / medical team and activate a clinical review or rapid response according to observations.

5. CONCURRENT ANTICOAGULANT MEDICATIONS[16 17 18 19 20]

- Each individual patient's risk / benefit assessment for insertion of an epidural needle / catheter is the responsibility of the anaesthetist
- Anticoagulation is the most important risk factor for the development of epidural haematoma following insertion of epidural needle / catheter
- **Therapeutic anticoagulation is contraindicated whilst epidural catheters remain in situ, however most patients do receive anticoagulant medications for thromboprophylaxis**
- It is vital that adequate time delays exist between the administration of anticoagulants and the removal of epidural catheters

5.1 Removal of Epidural Catheter [16 17 18 19 20]

An epidural catheter may be ceased and removed only when APS / Anaesthetist has instructed its removal and:

- The patient has **NOT RECEIVED unfractionated subcutaneous Heparin:**

  ≤5000 IU dose within the previous **six (6) hours**

  >5000 IU dose within the previous **twelve (12) hours**
- The patient has **NOT RECEIVED a prophylactic dose of low molecular weight heparin (LMWH) e.g. dalteparin or enoxaparin** within the previous **twelve (12) hours.**
- The patient has **NOT RECEIVED** therapeutic dose of:

  Rivaroxaban within the previous **twenty-six (26) hours**
  Apixaban within the previous **thirty (30) hours**
  Dabigatran within the previous **thirty-six (36) hours**
- The patient on warfarin has a documented INR of **<1.5**
- The anaesthetist must leave clear instructions about catheter removal and administration of any anticoagulants that are not discussed in this document
- **No prophylactic doses of anticoagulants are to be administered for at least**

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four (4) hours following the removal of an epidural catheter unless specified by APS / Anaesthetist / Anaesthetic (Consultants, Fellows, Registrar).

5.2 Procedure for Removal of Epidural Catheter[1 16 17 18 19 20 23]

- Ensure patient's coagulation results are most recent and adhere to 5.1
- Explain the procedure to the patient reassuring them that removal of the catheter is not uncomfortable
- Position patient lying on side or sitting up with spine slightly flexed forward
- Wash hands and organise equipment
- Stop infusion, **do not** wean infusion
- Carefully remove epidural catheter dressing
- Wash hands and put on sterile gloves
- Gently withdraw catheter. Do not forcefully pull out catheter. Contact the Anaesthetist / Anaesthetic (Consultants, Fellow, Registrars) / APS if any resistance is felt when trying to remove catheter
- If signs of infection (purulent drainage, redness or swelling) are present send the epidural catheter tip for culture and notify Anaesthetist / Anaesthetic (Consultants, Fellow, Registrars) / APS
- Ensure insertion site is dry post removal of catheter. If dry, can be left exposed. If not dry, use sterile gauze to absorb exudate, then apply small clear adhesive dressing. Confirm that epidural catheter tip is intact with second RN and document and sign on the bottom of page 3 of the NSW Health Epidural Analgesia Adult form SMR130.022
- Monitor patient's sensory and motor function every two (2) hours for first six (6) hours, then every four (4) hours for next eighteen (18) hours post epidural catheter removal
- All patients with epidural analgesia must have intravenous access at all times and continued for a minimum of six hours post epidural catheter removal
- Check the epidural site every eight (8) hours, for twenty-four (24) hours, then at 48 hours for any signs of infections e.g. redness, swelling, discharge, bruising, tenderness or pain [4,15]
- Immediately notify Anaesthetist or APS if any neurological deficit, weakness or sensory deficit persists more than 6 hours after epidural has ceased.
- Observe post-epidural site for signs of potential haematoma as risk is highest within the first four (4) hours following removal.
- Post-epidural information should be discussed with the patient and written information given to the patient (consult your local hospital printed resources)

6. DOCUMENTATION[1]

- Record all documentation on the NSW Health Epidural Analgesia Adult form SMR130.022 paper chart.
  For patients with Epidural analgesia admitted to the Intensive Care Unit (ICU) the epidural prescription is to be transcribed into eRIC by ICU prescribers in addition to the original prescription. Indication of a NSW Health Pain chart prescription in eMR / eMEDS is reflected as an 'additional chart'

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7. AUDIT

- Patients receiving epidural analgesia will be reviewed daily by Pain Management clinicians and Anaesthetists.
- Review of ims+ reports.

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21. Prescribing Protocol SESLHDPR/637 Fentanyl 2microg/mL with Adrenaline (epinephrine) 2 microg/mL and Bupivacaine 0.1%.
22. My Health Learning: Pain Management: Epidural infusions (Course code: 441985392).
23. SGH Epidural Pain Relief Patient Discharge advice, 2023

9. VERSION AND APPROVAL HISTORY

Date	Version No.	Author and approval notes
September 2016	1	Reviewed by Drug and Quality Use of Medicine Committee
October 2016	1	Reviewed and approved by Drug and Quality Use of Medicine Committee
August 2020	2	Minor Review. Revised by Matthew Fay, CNC Pain Management, SGH and Bernadette Bugeja, CNC Pain Management, POWH. Document name change; Added section 2.1: definitions and added appendices. Update to sections 4.2, 5.1 and references. Approved by Executive Sponsor.
September 2020	2	Formatted by Executive Services. To be tabled at October Quality Use of Medicines Committee.
October 2020	2	Approved by the Quality Use of Medicines Committee. Published by Executive Services.
16 July 2024	2.1	Minor review. Hyperlinks updated. Appendix updated. Addition of My Health Learning Module Pain Management: Epidural infusions Course Code: 441985392. Approved at SESLHD Drug and Therapeutics Committee.

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Appendix A: Front page – (Management Guidelines & Managing Adverse Effects)
A copy of the NSW health Epidural chart can be found at: [NSW Health Epidural Analgesia Adult form SMR130.022]

NSW Health

Facility:

EPIDURAL ANALGESIA (ADULT)
(Not for use in labour)

FAMILY NAME | MRN
GIVEN NAME | ☐ MALE ☐ FEMALE
D.O.B. _____/_____/_____ | M.O.
ADDRESS
LOCATION
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

SMR130022

Epidural Analgesia Management Guidelines

(For detailed information regarding epidural prescribing and management refer to local hospital policy)

- **Observations** on this form to be recorded hourly for 6 hours, then second hourly or more frequently if patient's clinical condition warrants.
- **Observations AFTER A RESCUE BOLUS** (blood pressure and pulse) every 10 minutes for 30 minutes and then 1 hour post bolus (or more frequently if directed by an anaesthetist).
- **Motor block assessment** every four hours and prior to mobilisation.
- **Dermatome level check** refer to local hospital policy.
- **Catheter site check** every 8 hours.
- **The infusion pump settings** to be checked at the commencement of each shift, on patient transfer and when the syringe or bag is changed.
- **Intravenous access** to be maintained for duration of epidural infusion or PCEA.
- **A dedicated giving set** that is yellow in colour and portless must be used.
- **No other opioids or sedatives** to be administered unless ordered by the Acute Pain Service or equivalent medical officer.
- **Therapeutic anticoagulants MUST NOT** be commenced without prior discussion with the Acute Pain Service or equivalent medical officer.
- **Inadvertent disconnection of epidural catheter from filter:** DO NOT re-connect and contact the Acute Pain Service or equivalent medical officer immediately.

Managing Adverse Effects

- **Motor block or developing leg weakness, severe back pain or tenderness at epidural site could be signs of an epidural haematoma or epidural abscess:** Contact the Acute Pain Service or equivalent medical officer immediately. The presence of these observations must also be reported to a consultant anaesthetist.
- **Hypotension:** Refer to instructions below for management guidelines.
- **Pruritus or persistent nausea or vomiting:** Administer PRN medication as prescribed on the patient's National Inpatient Medication Chart. If adverse effect continues contact the Acute Pain Service or equivalent medical officer.
- Antihistamines for pruritus are generally ineffective and may contribute to sedation.
- **Urinary retention:** Contact the patient's surgical or medical team.

REFER TO YOUR LOCAL CLINICAL EMERGENCY RESPONSE SYSTEM (CERS) PROTOCOL FOR INSTRUCTIONS ON HOW TO MAKE A CALL TO ESCALATE CARE FOR YOUR PATIENT

APPROPRIATE CLINICAL CARE FOR PATIENTS WITH YELLOW ZONE OR RED ZONE OBSERVATIONS:
1. ENSURE OXYGEN THERAPY IS IN PROGRESS
2. STOP EPIDURAL PUMP FOR ANY RED ZONE OBSERVATIONS
3. ENSURE THAT THE ACUTE PAIN SERVICE OR EQUIVALENT MEDICAL OFFICER IS CONTACTED

YELLOW ZONE RESPONSE

IF YOUR PATIENT HAS ANY YELLOW ZONE OBSERVATIONS OR additional criteria*
YOU MUST FOLLOW THE YELLOW ZONE RESPONSE INSTRUCTIONS ON THE NSW STANDARD OBSERVATION CHARTS AND INITIATE APPROPRIATE CLINICAL CARE AS STATED ABOVE

***Additional YELLOW ZONE Criteria for Local Anaesthetic Toxicity**
- Numbness and tingling around the mouth and tongue
- Metallic taste, tinnitus and dizziness

RED ZONE RESPONSE

IF YOUR PATIENT HAS ANY RED ZONE OBSERVATIONS OR additional criteria*
YOU MUST CALL FOR A RAPID RESPONSE (as per local CERS), FOLLOW THE RED ZONE RESPONSE INSTRUCTIONS ON THE NSW STANDARD OBSERVATION CHARTS AND INITIATE APPROPRIATE CLINICAL CARE AS STATED ABOVE

***Additional RED ZONE Criteria for Local Anaesthetic Toxicity**
- Muscular twitching
- Convulsion
- Cardiovascular collapse

ACUTE PAIN SERVICE or equivalent medical officer CONTACT:
BUSINESS HOURS page/phone: **OUT OF HOURS page/phone:**

Holes Punched as per AS2828.1: 2019
BINDING MARGIN - NO WRITING

EPIDURAL ANALGESIA (ADULT)
(Not for use in labour)

SMR130.022

NH700319 200421

NO WRITING

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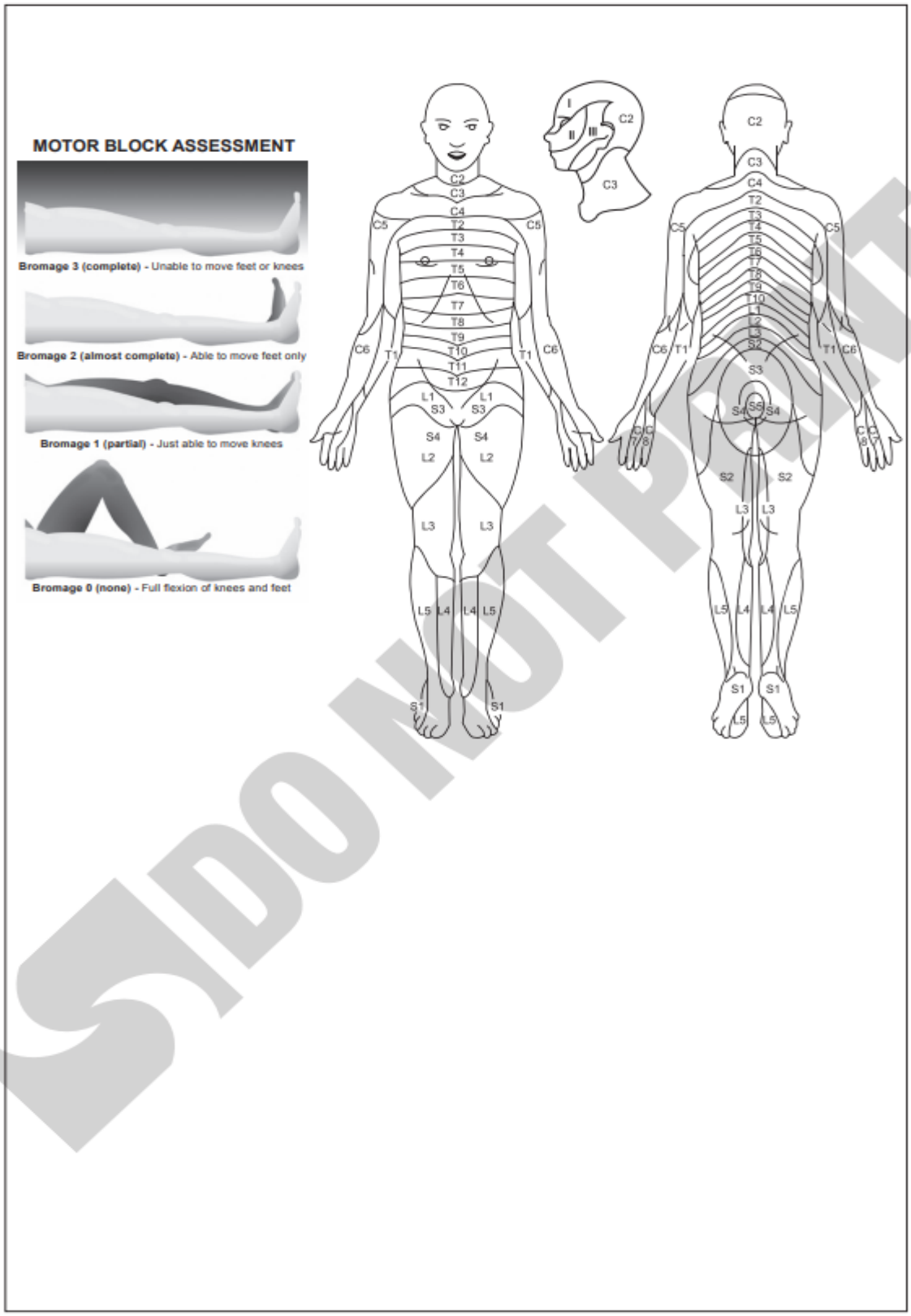
Appendix B: Back page – (Motor and Sensory block assessment)

A copy of the NSW Health Epidural chart can be found at: [NSW Health Epidural Analgesia Adult form SMR130.022]



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